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man's Journal he had proposed the name *Halisaurus* for a new genus of Mosasauroid Reptiles, but as *Halosaurus*, essentially the same word, had previously been given to a genus of fishes, he wished to substitute for the former the name of *Baptosaurus*.

Prof. Marsh also showed a tooth of a rhinoceros from the miocene of Squankum, N. J., which was the first authentic evidence of this animal east of the Mississippi River. It was found in the pits of the Squankum Marl Company, in the same layer with the remains of the *Elotherium Leidyanum* Marsh, and was presented to the Yale Museum by Mr. O. B. Kinne. The tooth was the last molar of the left under jaw, and indicated an animal about two-thirds the size of the living Indian species. He proposed for it the name *Rhinoceros matutinus*.

Jan. 11*th.*

The President, DR. RUSCHENBERGER, in the Chair.

Twenty-five members present.

PROF. LEIDY directed attention to some fossils, on which he made the following remarks:

1. A specimen consisting of less than the half of a vertebral body, was submitted to my examination by Prof. Hayden, who obtained it last summer during his geological survey. It is from Middle Park, Colorado, and Prof. Hayden thinks was derived from a cretaceous formation. Similar specimens were reported to be not unfrequent, and were known under the appellative of "petrified horse hoofs." The fossil indicates an elongated form of caudal vertebra of some large saurian. Much constricted towards the middle, such specimens would be most liable to break in this position, and the halves from their form might readily be taken, by the inexperienced in such matters, for what they are called.

The vertebral body in its entire condition would resemble in form those of *Megalosaurus*, but in form and other characters bears a near resemblance to those of *Poicilopleuron Bucklandi.* This is an extinct reptile from the oolitic formation of Caen, in Normandy, described by Deslonchamps; and remains apparently of the same animal from the Wealden of Tilgate, England, have also been described by Prof. Owen.

Poicilopleuron has generally been viewed as a crocodilian reptile with biconcave vertebræ, but probably pertains to the dinosaurs. The *P. Bucklandi* is estimated by Deslonchamps to have been about 25 feet long. The Colorado fossil indicates a much larger animal, having been more than one-third greater.

One of the most remarkable characters of the *Poicilopleuron* is the presence of a large medullary cavity within the bodies of the vertebræ, paralleled among living animals, so far as I know, only in the caudal vertebræ of the ox. The same character is presented by the Colorado fossil. In the former animal the cavity appears simple or unobstructed by osseous trabeculæ. In the Colorado fossil, as seen in the broken surface of the specimen, the medullary cavity occupies the lower two thirds of the interior of the body and is crossed by a few trabeculæ. The sides of the cavity, converging below, are constituted by a layer two lines thick and as compact as the walls of the medullary cavity in the limb bones of most ordinary mammals. The upper third of the interior of the body is occupied by the ordinary spongy substance which becomes more compacted ascending into the interior of the neural arch. The cavernous structure of the Colorado fossil is occupied with crystalline calcite.

The estimated length of the vertebral body is six inches or more. The sides are much narrowed towards the middle, and they are concavely depressed just below the sutural conjunction of the neural arch. A narrow groove occupies the lower border of the body, as is indicated to be the case in the Tilgate specimens. The posterior articular surface of the body is moderately depressed, but its lower fourth curves forward, producing a thick, convex ledge for the accommodation of a chevron. The breadth of the articular surface is scarcely four inches, and its depth is about the same measurement.

The species represented by the fossil may be named POICILOPLEURON VALENS. Should the division of the medullary cavity of the vertebral body into smaller recesses by trabeculæ be significant of other characters indicating the Colorado saurian to be distinct from *Poicilopleuron*, it might be named ANTRODEMUS.

2. A collection of fossils from the cretaceous formation of Pickens Co., Alabama, received from Dr. J. C. Nott, formerly of Mobile, indicates a mosasauroid reptile apparently of the genus *Clidastes*, of Prof. Cope. The specimens consist of an anterior portion of one ramus of the lower jaw, a portion of the upper jaw, an axis and several dorsal vertebræ. The species was of intermediate size to *C. iguanavus* of the cretaceous of New Jersey and *C. propython* of Uniontown, Alabama. It may be named *Clidastes intermedius*. The jaw fragments indicate more robust proportions than in *C. propython*. The fragment of the lower jaw is 5½ inches long and contains a series of nine teeth; the depth of the symphysis is one inch; the depth below the seventh tooth almost an inch and a quarter.

The body of a dorsal vertebræ is almost an inch and a half long; its articular cup is a little over an inch wide and about three-fourths of an inch vertically. The neural arch retains the zygosphene and zygantrum, indicating the iguanian character of the extinct reptile.

Since communicating the above I have received for examination some remains apparently of the same species, from the cretaceous formation of Kansas. Among them are two nearly entire dentary bones, the length of which is about eleven inches. They contain the bases of the teeth, indicating the full series to be twelve. The more slender jaws of *C. propython*, with the dentary bones about the same length, contain a series of about eighteen teeth.

3. The caudal vertebra represented in figures 15, 16, plate II, of the "Cretaceous Reptiles of the United States," indicates a reptile apparently of the genus *Leïodon* or *Macrosaurus*. The constitution of the vertebra is the same as in the caudals of the known species of this genus. It probably belongs to the species described by Prof. Cope under the name of *M. proriger*.

4. The fine specimen of a fossil turtle exhibited to the Academy was loaned by Mr. O. C. Smith, of Amherst, Mass., through Prof. Hayden, for my examination. It was obtained, as the latter informs us, from the Bridger Group of tertiary rocks, probably of miocene age, in the vicinity of Fort Bridger, Wyoming. It appears to represent an extinct genus, approaching in character the existing *Dermatemys* of Central America, and was nearly of the size and shape of *Dermatemys Mawii*, Gray, of Vera Cruz and Tabasco, C. A.

The carapace in its general form and construction especially resembles that of the latter. It has the same elongated vertebral plates and scutes. The sternum is intermediate in its proportions and shape with those of *Dermatemys* and *Staurotypus*. The interspaces of the carapace and sternum are very much larger than in the former, but proportionately less than in the latter. The pedicles of the sternum are not so deep as in *Dermatemys*, but are much wider. The back part of the sternum, intermediate in its proportions with what it is in *Dermatemys* and *Staurotypus*, ends in a posterior narrowly rounded extremity, not acute as in the latter, nor emarginate as in the former. *Dermatemys* has two large scutes intervening between the unusually large inguinal and axillary scutes. In *Staurotypus* the axillary and inguinal scutes meet across the sternal pedicles. In our fossil a single large hexagonal scute intervenes to the axillary and inguinal scutes. The latter are much larger than in *Dermatemys*, and extend in advance of the suture between the hyo- and hypo-sternal plates.

The name of BAPTEMYS WYOMINGENSIS is proposed for the turtle. When complete the carapace has measured about one foot and a half in length by one foot in breadth. The sternum has measured about one foot in length; the depth of its pedicles 4 inches, their breadth 3 inches; the length of the posterior extremity 4 inches, its breadth at base 4½ inches.

It is probable that the specimen, from the same locality, upon which was characterized the *Emys Wyomingensis* (Pr. A. N. S., 1869, 66,) belongs to the same animal.

5. Among a multitude of fragments of turtle shells obtained by Mr. J. Van A. Carter from the same formation and locality in which the preceding specimen was found, there are many apparently of the *Trionyx guttatus* (Pr. A. N. S., 1869, 66.) Some of the fragments pertain to an emydoid differing from the preceding, but they are too imperfect to ascertain the exact generic characters. In this species both the vertebral plates and scutes are proportionately much wider in relation with their breadth than in *Baptemys*. The scutes mentioned are deeply impressed, whereas in the latter their boundaries are scarcely traceable. The series of vertebral plates from the first to the eighth, inclusive, measure eight and a half inches. The fore part of the sternum is truncate as in *Dermatemys*, but not so much produced. For the species the name of EMYS STEVENSONIANUS is proposed, in honor of James Stevenson, the companion and able assistant of Prof. Hayden in his geological explorations of the west.

PROF. O. C. MARSH, of Yale College, exhibited a series of specimens of the remains of birds from the cretaceous and tertiary of the United States, which showed that this class was well represented during these periods, although no species have yet been described from these formations in this country, and none indeed from older rocks, since it now appears to be well established that the bird-like foot-prints in the Connecticut Valley were made by Dinosaurian reptiles. Among the species shown were the remains of at least five species of cretaceous birds, although but one, or possibly two, species have hitherto been described from strata of this age in Europe. The present cretaceous specimens were all found in the green sand of New Jersey, and with one exception in the middle marl bed. They are all mineralized, and in the same state of preservation as the bones of extinct reptiles found with them in these deposits, and hence are readily distinguished from the remains of recent birds which have occasionally been found near the surface in the marl excavations of New Jersey.

The most interesting of the specimens exhibited was the distal portion of a large and robust tibia, apparently of a swimming bird, about the size of a goose; it was found in the green sand at Birmingham, New Jersey, in the pits of the Pemberton Marl Company. For this new genus and species Prof. Marsh proposed the name *Laornis Edvardsianus*. Two species of small wading birds, which appear to have been allied to the Curlews, were also represented, each by the distal end of a tibia, and probably by some other less characteristic portions. The larger of these species, which was found in the green sand of the middle marl bed at Hornerstown, New Jersey, was named *Palæotringa littoralis*, the smaller species, which was called *Palæotringa vetus*, was founded on the specimen mentioned by Dr. Morton in his Synopsis of cretaceous fossils (p. 32), which has since, however, been generally regarded as a recent species. The specimen was found in the lowest marl bed at Arneytown, N. J., and is now in the collection of the Academy. Portions of the humeri of two small and closely allied species, apparently related to the Rail family, were part of the series shown. They were found deep in the green sand of the middle marl bed, near Hornerstown, N. J., in the pits of the Cream Ridge Marl Company. For the species thus represented the names *Telmatornis priscus* and *Telmatornis affinis* were proposed.

The remains of several species of tertiary birds were also exhibited by Prof. Marsh. Among these was the lower extremity of a tibia, closely resembling that of some of the cranes. It was found in the miocene of the Niobrara River, by Dr. F. V. Hayden, and is interesting as the only representative of a fossil bird yet detected in the tertiary deposits west of the Mississippi. This specimen, which belongs to the Academy, indicated a new species, which was named *Grus Haydeni.* Another species of extinct birds was represented by portions of a humerus and ulna, also in the collection of the Academy. They were found many years since in the miocene of Maryland by Mr. T. A. Conrad. This species, which appears to be closely related to the Petrels, was named *Puffinus Conradii.* Several other interesting specimens of bird remains were shown, but most of them were not sufficiently characteristic to admit of determination. With the exceptions already mentioned, the fossils exhibited belonged to the museum of Yale College.

Jan. 18*th.*

The President, Dr. Ruschenberger, in the Chair.

Nineteen members present.

Jan. 25*th.*

The President, Dr. Ruschenberger, in the Chair.

Thirty members present.

Mr. Wharton said that the ore of the nickel mine at Gap, Lancaster Co., Pa., consists substantially of a sulphide of iron, in which a small part of the iron is replaced by nickel, copper and cobalt. This ore after washing is smelted in a high furnace, and yields a matter about seven times as rich as the ore in the valuable metals, that is, containing 10 to 15 per cent. of nickel and cobalt and about one-third that quantity of copper. In this matter there are found at rare intervals small lamellar crystalline bodies, having high metallic lustre and pliability. In order to give a clearer idea of the nature of this substance, or to discover perhaps something still more interesting, search was made during several years of the mass remaining in each furnace bottom after its extinguishment, in those instances where the matter had shown the plates above named. Finally in such a bottom, definite crystals were found in the cavities of the matter, which crystals, being subjected to analysis, showed,

Copper,	1·85	per cent.
Nickel and Cobalt,	25·22	"
Iron,	64·10	"
Sulphur,	8·90	"
		100·07.

Supposing the copper to exist as Cu_2S there would remain of nickel, cobalt and iron (whose atomic weight are nearly similar) 89·32, and of sulphur 8·43, thus indicating the formula R_6S. As a crystallized compound of this composition has perhaps not yet been described there is a certain scientific interest in the observation made.

The crystals are very highly magnetic, very readily taking and holding polarity enough to cause a spicula to place itself in the line of the magnetic meridian when floated upon a surface of water. Their color is about that of zinc.

The following Standing Committees were elected for 1870: